CLAIMS

What is claimed is:

1. An impregnation compound for a fabric product comprising:

a pre-polymer;

a co-reactant curative; and

a diluent, said diluent solvating the mixture of said pre-polymer and said curative, and wherein said impregnation compound has a curative stoichiometry range of less than 85 percent.

2. The impregnation compound of claim 1 wherein said impregnation compound has a curative stoichiometry range of approximately 75 percent.

3. The impregnation compound of claim 1 wherein said pre-polymer comprises an amount of 100.0 parts by weight.

4. The impregnation compound of claim 1 wherein said co-reactant curative comprises an amount of 26.1 parts by weight.

5. The impregnation compound of claim 1 wherein pre-polymer comprises a urethane pre-polymer.

6. The impregnation compound of claim 1 wherein said diluent comprises a solvent.

7. The impregnation compound of claim 1 wherein the ratio of said curative to said pre-polymer is derived from the formula

$$\frac{6.34x0.75x230}{42} = \text{parts by weight of curative per 100 parts of pre-polymer}$$

where 6.34 is the isocynate content of the pre-polymer, 0.75 is the desired stoichiometry, 230 is the equivalent weight of the curative and 42 is the equivalent weight of the isocynate.

8. A method of impregnating a fabric with an impregnation compound comprising:

impregnating the fabric with the impregnation compound;

driving the compound into the fabric fibers;

removing excess compound; and

drying said fabric.

9. The method of claim 8 further comprising scouring the fabric before said impregnating.

10. The method of claim 8 further comprising treating the fabric before said impregnating.

11. The method of claim 8 wherein said treating the fabric comprises treating the fabric with a polymeric isocyanate to enhance linkage of the impregnation compound to the fabric.

12. The method of claim 8 wherein said impregnating comprises submersing said fabric in a tank of the impregnation compound.

13. The method of claim 8 wherein said driving the compound into fabric fibers comprises running said fabric through a set of rollers.

14. The method of claim 8 wherein said drying is done in an oven having a temperature sufficient to remove a diluent from said impregnating compound.

15. The method of claim 8 wherein said impregnation compound comprises:

a pre-polymer;

a co-reactant curative; and

a diluent, said diluent solvating the mixture of said pre-polymer and said curative, and wherein said impregnation compound has a curative stoichiometry range of less than 85 percent.

16. The method of claim 15 wherein said impregnation compound has a curative stoichiometry range of approximately 75 percent.

17. The method of claim 15 wherein said impregnation compound has a ratio of said curative to said pre-polymer according to the formula

$$\frac{6.34x0.75x230}{42} = \text{parts by weight of curative per 100 parts of pre-polymer}$$

where 6.34 is the isocynate content of the pre-polymer, 0.75 is the desired stoichiometry, 230 is the equivalent weight of the curative and 42 is the equivalent weight of the isocynate.

18. A fabric product comprising at least one resin fabric piece, said resin fabric piece comprising:

a resin impregnated fabric layer;

a first resin layer disposed on a first side of said resin impregnated fabric layer; and

a second resin layer disposed on a second side of said resin impregnated fabric layer.

19. The fabric product of claim 18 wherein resin comprises:

a pre-polymer;

a co-reactant curative; and

a diluent, said diluent solvating the mixture of said pre-polymer and said curative, and wherein said impregnation compound has a curative stoichiometry range of less than 85 percent.

20. The fabric product of claim 19 wherein said resin has a curative stoichiometry range of approximately 75 percent.

21. The fabric product of claim 19 wherein said resin has a ratio of said curative to said pre-polymer in accordance with the formula

$$\frac{6.34x0.75x230}{42} = \text{parts by weight of curative per 100 parts of pre-polymer}$$

where 6.34 is the isocynate content of the pre-polymer, 0.75 is the desired stoichiometry, 230 is the equivalent weight of the curative and 42 is the equivalent weight of the isocynate.

22. The fabric product of claim 18 further comprising a second resin fabric piece disposed along a surface of said second resin layer.